

CLAIMS.  

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- 1.- Method for echo cancelling in a communication line system, characterised in that said method is performed by adapting tunable passive elements of a hybrid (5) which forms part of the analog front end of said communications line system, whereby the values of the tunable passive elements are controlled by digital control means (4).
- 2.- Method according to claim 1, characterised in that a scaling factor (k) is used for adapting said tunable passive elements.
- 3.- Method according to claim 1, characterised in that adapting said tunable passive elements comprises a step of measuring the TX return loss gain in said hybrid (5), whereby, when this gain differs from zero, the digital control means (4) goes through a loop of adaptation of the tunable passive elements until this zero value of said TX return loss gain is obtained.
- 4.- Method according to claims 2 and 3, characterised in that said hybrid (5) comprises a hybrid bridge (13) with two branches (19), each comprising two tunable passive impedances ( $Z_2$  and  $Z_b$ ) in series, one of which being a tunable balance impedance ( $Z_b$ ), said tunable passive impedances being tuned such that the value of said tunable balance impedance ( $Z_b$ ) approximates as close as possible the scaled impedance value of the parallel

circuit of the line termination resistance ( $2R_t/2n^2$ ) in the TX paths, and the line impedance ( $Z_{tr+li}$ ).

5.- Method according to claim 4, characterised in that said hybrid (5) comprises a current to voltage converter (14), the feedback impedances ( $Z_{fb}$ ) of which being adapted so as to be equal to said tunable balance impedance ( $Z_b$ ).

6.- Device for echo cancelling in a communication line system, characterised in that it comprises:

- a hybrid (5), being part of the analog front end of said communication line system, said hybrid (5) comprising tunable passive elements, the values of which

are controllable, by a

- digital control means (4) coupled to said hybrid (5) and also included in said device.

7.- Device according to claim 6, characterised in that said tunable passive elements of said hybrid (5) are scalable by a predetermined scaling factor ( $k$ ).

8.- Device according to claim 6, characterised in that said hybrid (5) comprises a hybrid bridge (13) and a current to voltage converter (14).

9.- Device according to claim 8, characterised in that said hybrid bridge (13) comprises two identical branches (19), each comprising a tunable balance impedance ( $Z_b$ ) in series with a second tunable impedance ( $Z_2$ ).

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14.- Device according to claim 6, characterised in that said digital control means comprises a microprocessor (4).

15.- Device according to claim 6, characterised in that said tunable passive elements are part of an integrated circuit.

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